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ABSTRACT

This collection of abstracts is part of a continuing series providing information on recent doctoral dissertations. The 26 titles are concerned with a variety of topics related to reading skills and reading achievement in content-area courses or life situations, including the language of commonly used forms; the readability of a state driver's handbook; teachers' attitudes and knowledge about content area reading; guidelines for developing resources for low-reading-level consumers; and reading levels, readability, and achievement in fields as diverse as nursing education, industrial education, law, social studies, science, and mathematics. (AA)

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Meeks, Jane Warren

EFFECTS OF SPECIFIC 'IMBEDDED AIDS' ON THE COMPREHENSION OF SCIENCE MATERIAL FOR THREE LEVELS OF READERS

Morrison, Kenneth L.

READERS' WORK: DEVICES FOR ACHIEVING PEDAGOGIC EVENTS IN TEXTUAL MATERIALS FOR READERS AS NOVICES TO SOCIOLOGY

Oldham, Mary Jo

GUIDELINES FOR DEVELOPING RESOURCES FOR LOW-READING-LEVEL CONSUMERS

Pachtman, Andrew Brook

THE EFFECTS OF A READING AND LANGUAGE ARTS PROGRAM ON THE CRITICAL THINKING AND CRITICAL READING OF THE FIRST-YEAR LAW STUDENT

Paige, Gomez Collier

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AN INVESTIGATION TO DETERMINE THE ADEQUACY OF THE GATES-MACGINITIE READING TESTS AS A PREDICTOR OF SUCCESS IN THE FIRST SEMESTER ANATOMY AND PHYSIOLOGY COURSE IN AN OPEN ADMISSIONS COMMUNITY COLLEGE

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AN INVESTIGATION OF THE EFFECTS OF READING GUIDES AND A DIRECTED READING METHOD UPON WORD PROBLEM COMPREHENSION, PROBLEM SOLVING ABILITY, AND ATTITUDE TOWARD MATHEMATICS

Rivers, Robert Hinton

A STUDY OF THE ASSOCIATION BETWEEN THE USE OF INDIVIDUALIZED, SELF-PACING SCIENCE CURRICULUM MATERIALS (ISCS) AS A READING COURSE AND GAINS IN READING COMPREHENSION AND VOCABULARY SKILLS OF SEVENTH GRADE STUDENTS

Simon, Georgianna

A COMPARISON OF READABILITY INDEXES OF UPPER ELEMENTARY SOCIAL STUDIES TEXTBOOKS

THE LANGUAGE OF FIFTY COMMONLY USED FORMS

ABBASS, Mazin, Ph.D.
Southern Illinois University, 1976

Major Professor: Dr. Margaret Keyser Hill

The purpose of this study was to analyze the language of fifty commonly used application forms for readability, and difficulty. The research questions centered on examining in various ways the semantic and syntax of the forms. Words on the forms which were intended for the form user were included in the analysis. A visual definition of a word was used to determine the word length. Variant spellings, plurals, and abbreviations were counted as different words. Because of computer analysis, distinctions between small and capital letters were lost. An alphabetical list of words for each form and for all forms combined were compiled. The forms were compared with respect to length, readability, T-unit density, and word length variables. Forms were also compared against two word frequency lists.

Many of the words appearing often on forms did not appear on the high frequency word lists. The readability of forms according to the FORCAST formula ranged from eighth grade level to over sixteenth grade level. Generally, the language of forms combined difficult semantics with oversimplistic syntax.

Order No. 77-6197, 520 pages.

AN ANALYSIS OF READING ABILITY AND ITS RELATIONSHIP TO SELECTED STUDENT VARIABLES IN INDUSTRIAL AND TECHNICAL EDUCATION

BENEDICT, Craig Loran, Ed.D.
East Texas State University, 1977

Adviser: Leon T. Harney

Purpose of the Study: The purpose of this study was to analyze the relationship between reading ability and the selected student variables: (1) academic grade point average; (2) academic classification; (3) age; (4) degree option within the Department of Industry and Technology, East Texas State University; (5) transfer status; (6) ethnic background; (7) residency status; and (8) remedial reading course background.

Procedure: The study was conducted during the fall semester, 1976, in the Department of Industry and Technology, East Texas State University. Data were obtained from 115 students identified as full-time majors.

The Carver-Darby Chunked Reading Test was administered to the students involved in the study to ascertain the reading ability type of each student. A researcher designed questionnaire was administered at the same time to determine the necessary data involving the student variables under investigation.

The Chi square test for independence was used to analyze all nominal data responses. The analysis of variance, one-way classification, was used to analyze all ordinal data. A t test for significance of difference between means was utilized when a significant F-ratio was realized.

Findings: An analysis of the findings of the study revealed: 1. There was no significant difference between reading ability and academic grade point average. 2. There was no significant difference between reading ability and academic classification. 3. There was no significant difference between reading ability and age. 4. There was no significant difference between reading ability and degree option within the Department of Industry and Technology, East Texas State University. 5. There was no significant difference between reading ability and transfer status. 6. There was no significant difference between reading ability and ethnic background. 7. There was no significant difference between reading ability and residency status. 8. A significant difference, beyond the .05 level of confidence, was found between reading ability and remedial reading course background indicating a definite relationship.

Conclusions:

1. Research should be conducted to determine the influence of various methods and types of programs in remedial reading and their impact on the ability to read technical content. 2. Research should be conducted to determine the extent that reading ability contributes to success in the field of industrial education. 3. Research should be conducted to determine if specific reading skills are necessary in the content area of industrial education. 4. Research should be conducted in an attempt to develop an instrument which would measure specifically the reading ability of students with technical materials. 5. Research should be conducted to determine if specific reading training in technical materials would increase achievement in industrial education. 6. Research should be conducted between community college technical programs and senior college technical programs in terms of reading ability and achievement. 7. Research should be conducted at the middle school and high school level to determine strategies where industrial education programs can function as a vehicle to improve reading ability.

Order No. 77-27,535, 111 pages.

A STUDY OF THE RELATIONSHIPS AMONG THE READING LEVELS OF PRACTICAL NURSING STUDENTS, READABILITY LEVELS OF TEXTBOOKS, AND THE PASS/FAIL SCORES ON THE STATE BOARD EXAMINATIONS FOR PRACTICAL NURSING STUDENTS

CAFFEY, Musa Baker, Ed.D.
University of Southern Mississippi, 1977

Purpose of the Study

The general purposes of this study were stated as follows: Do the reading abilities of the practical nursing students relate to their success on the Mississippi State Board Examination for Practical Nursing (PN) Licensure? Do the reading abilities of the students correspond to the readability levels of the textbooks used in the practical nursing instructional programs? Do the reading gaps between the reading levels of the textbooks used in the practical nursing programs of instruction relate to the scores obtained on the Mississippi State Board Examination for Practical Nursing (PN) Licensure?

Procedure

The population of this study consisted of 246 students enrolled in the practical nursing programs in six selected junior colleges in Mississippi. These colleges were Northeast Mississippi Junior College, Booneville; Holmes County Junior College, Goodman; Hinds County Junior College, Jackson and Vicksburg; Jones County Junior College, Ellisville; Jackson County Campus, Mississippi Gulf Coast Junior College, Gautier; and Copiah-Lincoln Junior College, Wesson. The subjects had completed the 12-month course of study successfully and had taken the state board examination required for licensure. Subsequently, subjects were divided into two independent groups according to pass/fail scores on the state board examination.

The Nelson-Denny Reading Test for College Students, Form C, was administered to subjects to determine individual reading levels early in the practical nursing training program. The readability levels of 41 textbooks used in the instructional program were determined through the use of the Flesch readability formula. An analysis of variance was calculated to determine if there was a significant difference between the reading gap scores in each independent group. The reading gap is the measurement of the difference in a practical nursing student's reading level and the readability level of the textbooks. The 41 textbooks were categorized into 12 groups according to subject matter.

Findings

From the analysis of the data, there is a significant difference in the reading gap scores of those students who passed the state board examination and those students who did not pass the state board examination. By using graphs of the 12 subject matter groups of textbooks, the readability level of each textbook was shown on a vertical bar. The mean reading level of each independent group of students was shown on each graph by horizontal lines. This gives a clear-cut display of the differences in the reading ability of the students and the readability of the textbooks. All but one textbook were above the reading level of both groups.

Conclusions and Recommendations

Within the limitations of the study, it may be concluded that low reading ability is a major factor to be considered in any enumeration of reasons for poor performance on the state board examination by practical nursing students. The reading gap between the reading ability of the subjects and the readability cant, and some corrective measures should be contemplated. The results of the study suggest that further investigation of the importance of reading ability of practical nursing students as related to success on the state board examination may yield important information concerning the value of providing remedial instruction to practical nursing students before they start the actual practical nursing instructional program as opposed to/or in conjunction with raising admittance standards in terms of reading ability. Order No. 77-22,863, 91 pages.

CONTENT READABILITY AND SOCIAL STUDIES ACHIEVEMENT OF INTERMEDIATE STUDENTS READING BELOW GRADE LEVEL

CONKLING, Richard Dyson, Ed.D.
University of Miami, 1976

Supervisor: Dr. Mark Murfin

The Problem

The inability of many elementary children to read their social studies textbooks has long been recognized. While some progress has been made toward providing more readable texts for children reading on or above grade level, the below grade level readers have received little relief. This suggested a need for curriculum materials which could be effectively read by these children. The purposes of this study were: (1) to determine the effectiveness of intermediate social studies material written with below grade readability to teach concepts and content to intermediate children; (2) to compare achievement in social studies of intermediate students reading below grade level and using social studies material with different levels of readability; (3) to demonstrate the feasibility of rewriting intermediate social studies material to a primary grade readability level using a readability formula.

The Study

The design of the experiment was a 2 X 2 X 3 completely crossed, factorial design, fixed effects model using Schools, Treatment, and Reading Level as factors. Two classrooms from two schools with median reading scores of one or more years below grade level were selected. One classroom in each school was given the control material, which was the reproduced original version of the first five chapters of a fifth grade social studies text. The other classroom received the experimental treatment which was the same text material rewritten to a 2.4 level of readability. An investigator constructed, multiple-choice, social studies test was used to pretest and posttest the sample. Analysis of covariance was used to treat the data.

The major hypothesis stated that fifth grade students reading a year or more below grade level and using fifth grade social studies material rewritten to a second grade level of readability would do significantly better than similar students using the original version of the same fifth grade social studies material. The hypothesis was not accepted.

Conclusions

The following conclusions were drawn from this study: 1. Fifth grade social studies material rewritten to a second grade level of readability is no more effective than standard textbook material for teaching social studies content and concepts to intermediate students reading one or more years below grade level. 2. The social studies achievement of the students in this study, as measured by the social studies achievement test, was not affected by the use of social studies textbook material written with different levels of readability.

Recommendations

It is recommended that when testing the readability of social studies material for primary levels of readability that the proper noun rules be omitted for both the 1972 Spache Readability Formula and the Fry Readability Graph.

It is recommended that a similar study be conducted using a social studies achievement test with a low-guessing factor that is constructed for and validated on students reading below the fifth grade level.

It is recommended that a study be conducted on the effect of concept burden on intermediate students reading one or more years below grade level.

Order No. 77-13,935, 215 pages.

TEACHING READING SKILLS IN SOCIAL STUDIES IN SECONDARY SCHOOLS

COPPENHAVER, Charlotte Anne Powers, Ed.D.
Duke University, 1977

Supervisor: William H. Cartwright

Reading in the social studies classroom involves complex demands on student abilities which increase when students enter secondary schools. The general reading difficulties experienced by many secondary school students add to the particular reading problems raised by social studies materials. Therefore, it is important that social studies teachers in secondary schools teach reading skills. Chapter I explores the rationale for doing so.

In Chapter II reading is defined by analyzing literature from the fields of reading and social studies education. For social studies teachers, reading is the process of getting meaning from social studies materials in order to use the arguments, ideas, and evidence presented there. The materials most often used in social studies classrooms are textbooks, primary sources, and other visual materials. Specific reading skills can be organized under four headings: vocabulary, critical analysis, organizational, and research skills.

Before teachers implement programs, they should assess the difficulty of social studies materials and student knowledge of how to read them; Chapter III provides a basis for such an assessment. A brief consideration of readability formulas enables teacher evaluation of materials. Chapter III also sets out guidelines for assessment: measures should be criterion-referenced and process-oriented; students should have several opportunities to exhibit skills without fear of being graded; students should be trusted to provide self-evaluations; classroom teachers must retain primary responsibility for the evaluation which guides classroom teaching.

Chapter IV identifies four skill clusters (vocabulary, critical analysis, organizational, research) and considers them in relationship to textbooks. Among other activities, it suggests that students might draw, diagram, or chart information in order to be able to use it effectively. In addition, knowledge of social studies writing patterns may help students organize data. Reference material to aid student use of textbooks is suggested.

Chapter V deals with primary source material, including public documents such as speeches or laws, private documents such as letters or diaries, and popular literature such as newspapers or poetry. Skills of vocabulary use, critical analysis, organization and research are considered. In addition, suggestions for rewriting selections are made.

Chapter VI considers the use of visual material in the framework of the four skill clusters. The vocabulary of symbols and the process of editing are fundamental to visual material; the visual format also provides another way for students to express their own ideas.

Order No. 77-21,868, 225 pages.

THE APPLICATION OF THE GRANOWSKY AND BOTEL SYNTACTIC COMPLEXITY FORMULA TO SELECTED SOCIAL SCIENCE TEXTBOOKS TO DETERMINE READABILITY

CRAFT, Lynda Jane Harris, Ed.D.
Auburn University, 1977

Director: Andrew M. Weaver

The major purposes of this study were: (1) to establish some ranking or weighting by which the relative reading difficulty of social science textbooks and other materials can be determined on the basis of syntactic complexity; and (2) to establish a model by which textbooks can be reconstructed and adapted on the basis of syntactic complexity.

The investigator chose the two social science textbooks for each of the grades seven through twelve most commonly used in Alabama public schools (1976–77) and the Gray Oral Reading Test for comparative study.

Two readability formulas--the Granowsky and Botel Syntactic Complexity Readability Formula and the Fry Readability Graph--were applied to each of the textbooks and to each leveled passage of the Gray Oral Test. The readability counts and rankings were recorded from the samples taken from each book and each leveled passage. The textbooks and Gray Test were compared with each other and with a theoretically ideal progression line.

Findings indicated that the selected social science textbooks are not consistent in the sequential development of readability either in terms of syntax or word and sentence length. The Gray Oral Reading Test has apparently been developed on the basis of syntax and precise word and sentence length as determined by the Granowsky-Botel Syntactic Formula, and the Fry Readability Graph.

Finally, a model was developed on the basis of four elements of syntax which occurred the most frequently in the 321 sentences analyzed. Order No. 77-16,821, 192 pages.

THE RELATIVE EFFECTS OF TRANSLATING FROM MATHEMATICS TO ENGLISH AND FROM ENGLISH TO MATHEMATICS ON VERBAL PROBLEM SOLVING IN ALGEBRA 2

DEEP, Ronald, Ph.D.
The Florida State University, 1976

Major Professor: Herbert Wills

Much of the past research on verbal problem solving has focused on the translational task of converting verbal description into algebraic description. The purpose of this study was to reverse this direction of translating by proceeding from the algebraic equation to a verbal description of the equation, and to compare the resulting effects with the effects from the traditional direction.

Three instructional treatments were administered to a sample of 79 high school students from three intact algebra 2 classes. The three treatments were Write (W), Read (R), and Write and Read (WR). The Write (W) treatment required 23 subjects to read the verbal description of the problem and to write a corresponding algebraic equation. The Read (R) treatment required 29 subjects to read the verbal description of the problem and to interpret given algebraic equations in terms of the verbal theme. The Write and Read (WR) treatment required 27 subjects to experience both the W and the R treatment. The verbal problems were of the work, motion, and miscellaneous types, and their verbal description was identical for each treatment. The author administered each treatment.

Eleven 50-minute classroom sessions were used. Seven sessions were used for instruction, and four sessions were used for testing. The administered tests were pretest, posttest, retention (all three identical), and transfer. Each test consisted of a reading section related to the R treatment and a writing section related to the W treatment. The transfer test consisted of verbal problems with letter data as well as numerical data.

A separate one-way analysis of covariance (ANCOVA) was used for data analysis on each test section. The covariates were the pretest scores and percentile measures in vocabulary, comprehension, computation, and problem solving. An alternate 2 x 3 (ability by treatment) multivariate analysis of covariance (MANCOVA) was also used to analyze the data with pretest scores used for the covariate. The level of significance for each statistical test was set at .05.

The results from the MANCOVA confirmed the results from the ANCOVA's. There was no significant difference among the adjusted reading means for each treatment, but there was a significant difference among the adjusted writing means ($p<.01$). The Newman-Keuls procedure was used to examine all pairwise contrasts of the adjusted writing means.

For the posttest writing section, W subjects performed significantly better than R and WR subjects; and WR subjects performed significantly better than R subjects. For the transfer writing section, W and WR subjects performed significantly better than R subjects; but there was no significant difference between the performance of W and WR subjects. For the retention test writing section, W subjects performed significantly better than R and WR subjects; but there was no significant difference in performance between R and WR subjects. In addition, the ability factor (high versus low) was significant (favoring high) for each section of each test with the exception of the transfer writing section. There was no significant ability-treatment interaction. Order No. 77-8578, 175 pages.

A COMPARISON OF THE EFFECTS OF READABILITY AND TIME ON LEARNING THE CONTENT OF A STATE DRIVER'S HANDBOOK

EWING, Murl Jean, Ph.D.
The Florida State University, 1976

Major Professor: Edwin H. Smith

The primary purpose of the study was to determine the effects of readability and time on learning the content of the Florida Driver's Handbook and the Driver's Education Handbook by non-licensed ninth grade students. A third main effect was to determine if motivation enabled students to overcome the difficulties of the higher readability level of the Florida Driver's Handbook over the lower readability of the Driver's Education Handbook. A fourth main effect was to learn about the influence of reading grade level on readability, motivation, and time.

The subjects were 169 ninth grade students who had never had a driver's license. The subjects were taken from three high schools in two rural counties in north Florida. Randomization occurred by using a table of random numbers so that students in each school were divided into thirds for the time frame and then into halves for the two handbooks.

A questionnaire of 18 items was used to measure motivation to acquire a driver's license. A comprehension test of 60 questions was used to measure the content from the driver's handbooks which had been learned. One-half of the test was given after the first study period and the other half after the second study period. The subjects were divided into thirds, one group having 20-minute study periods, the second group having 30-minute study periods, and the third group having 45-minute study periods.

A factorial analysis of variance was made using a computer. The design was a 2 X 2 X 2 X 3 analysis. The variables were motivation (high and low), reading grade level (high = 10.0 and above; low = less than 10.0), readability (the level of the Florida Driver's Handbook is approximately 11th grade; the level of the Driver's Education Handbook is approximately 5th grade), and time (20-minute, 30-minute, and 45-minute study periods).

The main effects of motivation, readability, and reading grade level all reached alpha = .05 significance. Time did not reach significance level. The interactions did not reach significance.

1. Students working from the handbook with lower readability, Driver's Education Handbook, showed higher mean scores than students working from the Florida Driver's Handbook. 2. Motivation without appropriate reading grade level was not sufficient to overcome the higher readability of the Florida Driver's Handbook. 3. Time had no significant effects. Students who had appropriate reading skills for the material they were attempting did essentially as well with 20-minute study periods as students having longer study periods. 4. The variable showing strongest influence was reading grade level.

The most important conclusion to be drawn from this study is that students who have appropriate reading skills for the materials they are attempting to learn, can learn regardless of time or motivation. Order No. 77-8580, 104 pages.

ORIGINAL AND MODIFIED READING-LEVEL MATERIALS OF THE ISCS LEVEL III ON SCIENCE ACHIEVEMENT

GREENE, Charles Edward, D.Ed.
The Pennsylvania State University, 1976

This study investigated the idea that learning of selected science content is inhibited by a combination of less-than-optimum reading ability and reading levels inappropriately high. The study was predicated on the application of Salomon's compensatory model to reading ability.

The study used a 2 x 3 factorial design with two levels of treatment (original and modified reading levels) and three levels of reading ability (high, moderate, and low). Analysis of variance was used to test main and interaction effects upon the criterion specific achievement in science.

Post hoc analyses of variance tests were performed to identify discrepancies in teacher time spent with students and student time during the study.

One hundred fourteen ninth-grade students from a junior high school in a northeast industrial community participated in this study. Students were classified into high, moderate or low ability readers using the Gates-MacGinitie Reading Test. Matched pairs of students by reading ability were randomly assigned to experimental or control groups.

Both treatment groups studied the same materials which were taken from the Intermediate Science Curriculum Study (ISCS) Level III Program. The control group was assigned the original Environmental Science (ES) materials and the experimental group was assigned the modified ES materials. The modified ES materials were reduced in reading level by 2-3 grade levels using a technique developed by the principal investigator.

Upon completion of the assigned ES materials each student was administered a 32-item teacher-made science achievement test. The number of correct answers to the response questions and the number of days to complete the assigned material were recorded. Also recorded were 24 observations of teacher time spent with students. Each of the two team teachers was recorded on 12 different occasions.

The mean scores on the science achievement test for the experimental group (modified ES materials) was not significantly different from the control group (original ES materials). The difference in reading materials had no significant effects on science achievement.

There was a significant main effect due to reading level. For both experimental and control conditions the high-reading-ability subjects scored significantly higher on the achievement test than moderate-reading-ability subjects, who in turn scored significantly higher than the low-reading-ability subjects.

The low-reading-ability subjects in the experimental group did not score significantly higher on the achievement test than low-reading-ability control subjects. No evidence was obtained to show that modified reading material affects performance of low-ability readers.

Moderate-reading-ability subjects using the original materials did not perform differently than moderate-reading-ability subjects in the modified condition. No evidence was obtained to show that reading material would affect performance of moderate-reading-ability subjects.

It was found that high-reading-ability subjects in the original condition did not perform differently than high-reading-ability subjects in the modified conditions. No differences in performance were expected between these two subgroups.

A 2 x 2 analysis of variance was completed to find any significant differences in teacher time spent with students.

Post hoc analyses of teacher time spent on treatments showed no significant effect. The teachers did not spend unequal time with subjects using specific reading materials.

Significant effects due to teacher were not obtained. Neither teacher spent significantly more time with the students.

The interaction of reading material and teacher time was not significant. Teacher time was not differentially distributed across the treatments.

A post hoc 2 x 3 analysis of variance was completed to ascertain any discrepant significant differences among groups to number of days to complete ES material. This analysis failed to demonstrate any significant effects. Neither subject reading ability level nor specific reading material (original or modified) influenced the number of days used to complete the ES unit.

It is suggested from the study that modification of the ISCS Level III ES materials to a reduced reading level does not significantly affect science achievement for the low-ability-reading student. The single factor of reducing the reading level suggests the possibility that other factors might covary with science achievement. Order No. 77-9673, 250 pages.

SECONDARY CLASSROOM TEACHERS' AWARENESS, PERCEPTION, AND ATTITUDE TOWARD READING IN THE CONTENT AREAS

HAQUE, Janet Easton Antcliff, Ph.D.
Michigan State University, 1976

The major purpose of this study was to survey and describe the existing situation within a selected school district in terms of reading awareness, perception and attitude and the present influence of the reading teacher and factors associated with the same, the results of which would provide a base upon which to objectively construct future inservice programs in reading in the content areas. Another purpose of this study was to develop a valid and reliable instrument which could be used to survey teachers' attitudes toward reading in the content areas.

The methodological procedure consisted of the measurement of the dependent variable, attitude, and 15 independent variables, derivation of empirical hypotheses, followed by statistical measures used to test the hypotheses, and development of the instrument, which was tested for its reliability and validity, for measurement of attitudes toward reading. Data was collected from six secondary schools, three of which had reading consultants, and three of which did not have reading consultants, in Lansing School District, Lansing, Michigan.

The findings described the setting of the study in terms of total numbers of respondents (N=148) from each school and four subject areas, the respondents years of teaching experience, the number of courses in reading the respondents had taken and the number of inservices in reading in which the respondents had participated.

The majority of respondents were unable to define both reading in the content area (90 percent) and remedial reading (88.5 percent). It was found that (98.6 percent) utilized a number of reading strategies that varied with the content area. Mathematics teachers were found to be the least familiar with reading objectives and incorporated fewer reading skills into lesson plans than the other three content area disciplines. English teachers were found to be the most familiar with reading objectives, to use reading objectives, to incorporate more reading skills into lesson plans, and science teachers were found to name more reading skills used most frequently in lesson plans as compared to the other three content area disciplines.

Teachers in schools with reading consultants perceived his role significantly different than teachers in schools without reading consultants. Reading consultants were perceived as functioning in a variety of ways by the teachers in their buildings. The majority of teachers perceived a need for inservice in reading (87.2 percent), perceived the instructional material as inadequately meeting the reading level needs of their students (70.27 percent), and perceived a need for help in planning for reading instruction within their classes (85.8 percent). The teachers' perception of adequacy of instructional material was significantly different in schools with reading consultants and schools without reading consultants.

The respondent teachers of this study were found to have had a more positive than negative attitude toward reading. The mean attitude score was 76.966, which was almost 11 points above the dividing point (66) of positive and negative attitudes. Twenty-two respondents had very positive attitudes toward reading, and none of the teachers had extremely negative attitudes, although 13 teachers were classified as having negative attitudes toward reading. By having positive attitudes toward reading, the respondents viewed themselves as responsible for reading instruction within their own classes, as responsible for teaching concept development, and library and reference skills. They also perceived as important to use more than one reading level textbook in their classes, to know the reading level of their texts, the determine the reading level of new instructional material before purchasing it, and that it was important to offer reading to all students in the secondary schools, not just the poorer readers.

Ten of the 15 independent variables were found to have a positive and significant correlation with attitude. These variables were courses in reading, inservice in reading, utilization of reading strategies, familiarity with Secondary Reading Objectives for Social Studies, Science, Mathematics and Language Arts, use of Secondary Reading Objectives, incorporation of reading skills into lesson plans, reading skills used most frequently, role perception of the reading teacher, need perception for inservice in reading, and need perception for help in planning. Almost all the independent variables were intercorrelated with one or more independent variables. In "prediction analysis," six variables were found to contribute 46.20 percent of the variation in attitude toward reading. They were utilization of reading strategies, need perception for inservice in reading, courses in reading, familiarity with Secondary Reading Objectives for Social Studies, Science, Mathematics and Language Arts, need perception for help in planning for reading instruction, and reading skills used more frequently in lesson plans. Order No. 77-5813, 210 pages.

A STUDY OF THE RELATIONSHIP BETWEEN PIAGETIAN COGNITIVE DEVELOPMENTAL LEVEL AND READING COMPREHENSION IN COLLEGE SCIENCE STUDENTS

HARGROVE, Rachel Dailey, Ed.D.
Rutgers University The State University of New Jersey (New Brunswick), 1977

Chairperson: Michael D. Piburn

Skills in reading scientific material have become proportionately more important for students who wish to succeed in today's curriculum. Factors which influence the comprehension of written materials have been researched extensively. Recently, cognitive level, as defined within the Piagetian framework, has received attention as another variable which may contribute to reading comprehension.

The major purpose of this investigation was to determine the relationship that exists between the Piagetian cognitive level of the student and the reading comprehension of science content materials.

The subjects were 50 college students, 27 females and 23 males, selected from introductory biology courses. The socioeconomic level of the sample is best described as ranging from low to middle class. Comparability of the sample with respect to sex and aptitude (as measured by SAT Verbal and Math scores) was established by statistical analyses.

Three Piagetian-type tasks and Cloze comprehension passages requiring logical operations similar to those employed in solving the tasks were administered. The formal operations tapped by the tasks were: combinatorial reasoning--the chemical task; proportional reasoning--the balance task and "Mr. Tall and Mr. Short." Cloze tests were prepared from passages selected from the biology text and a nonscience text. Passages were rated at approximately the eleventh grade level of difficulty. A standardized measure, Davis Reading Test, Form 1B, Series 1, was also administered, thus permitting comparison with a national sample.

Each subject was tested individually on the Piagetian tasks; the reading tests were administered to groups. Subjects were classified as formal operational on the basis of successful completion of two of the three formal level tasks. All non-formal subjects in this study were classified as concrete operational.

Results of chi-square analyses of the data revealed that the number of formal subjects reading above the median on Davis Reading Test significantly exceeded the number of concrete subjects. t-Test analyses indicated that formal subjects had significantly higher mean comprehension scores than concrete subjects on cloze science and nonscience passages. The results of correlational analyses revealed significant relationships between the variables: Piagetian cognitive level, Davis Reading Test, Cloze Test I and II (Science) and Cloze Test III (Nonscience), for formal and concrete subjects.

The results were interpreted as indicating that (1) the Piagetian cognitive development level of the student is a significant variable in the comprehension of written science materials; (2) the logical complexity of the written passage is a significant determinant of comprehension difficulties. Unfortunately, logical complexity is not measured by readability formulas. (3) Logical reasoning ability and reading comprehension are complementary processes, dependent upon the development of the logical operations posited by Piaget.

Recommendations for curriculum implementation and further research were presented. Order No. 77-13,464, 186 pages.

INTRA-ACT: A LANGUAGING IN THE CONTENT AREAS TEACHING PROCEDURE

HOFFMAN, James Vern, Ph.D.
University of Missouri - Kansas City, 1977

This study investigated Intra-Act, a new instructional strategy to improve content area reading comprehension. The study included a qualitative analysis of the mechanics and design of the procedure itself, and an effort to extend the evolution of a developing thesis of content area reading instruction now known as Languaging in the Content Areas (LICA).

The subjects involved in this study were tenth grade students enrolled at an area high school. Prior to the investigation, these subjects had been assigned to one of three intact English classes on the basis of purported academic ability. The validity of these assignments was supported by data from pre-treatment tests administered by the investigator. The three intact classes were designated as high, above average, and average groups for the purposes of treatment and data analysis.

The basic form for this research study was a repeated measures design which allows subjects to act as their own control. The treatment period spanned a total of six sessions. Sessions one and six were control conditions in which subjects simply read selections and then responded to comprehension questions. Sessions two and three (initial) and sessions four and five (final) were treatment conditions during which the Intra-Act Procedure was employed before comprehension questions were answered. In addition to the results of these immediate recall tests of comprehension, data were also collected on (1) a single delayed comprehension measure, (2) a series of valuing exercises, and (3) a linguistic analysis of the oral interactions of group members during Intra-Act sessions.

A series of analyses of variance with repeated measures were used to scrutinize these data. The results were interpreted as being generally supportive of the efficacy of the procedure. A consistent interaction between ability level and treatment, with the high ability subjects apparently more responsive to the affects of Intra-Act, was noted.

Based on these findings, the investigator evolved a number of recommendations related to possible adaptation of the Intra-Act Procedure for classroom use. In addition, potential implications of these findings for advancement of the LICA thesis were also advanced. Order No. 77-27,334, 119 pages.

DEVELOPMENT AND INITIAL VALIDATION OF AN INSTRUMENT TO ASSESS SECONDARY SCHOOL TEACHER KNOWLEDGE OF TECHNIQUES FOR TEACHING READING OF CONTENT AREA MATERIALS

HUGHEY, Roberta Morse, Ed.D.
The University of Florida, 1976

Chairman: H. Thomas Fillmer

The purpose of this study was to develop and pilot test an instrument to assess teacher knowledge of techniques for helping secondary school students read content area materials. The first phase of the research included a survey of conceptual and research literature in secondary reading to derive a consensus-based set of goals of secondary school reading instruction and to identify principles, generalizations, and concepts concerning effective instruction in reading content area materials. Instrument development included writing a content-by-process outline derived from the principles of effective instruction in reading content area materials identified. Based on the outline, a pool of multiple-choice items for a preliminary draft of the assessment instrument was written and submitted to an evaluating committee of authorities and practitioners in secondary reading instruction. Following appropriate revisions, the revised draft was pilot tested with a group of undergraduate and graduate students in the University of Florida department of secondary education and inservice teachers. The draft was again revised based on the pilot test results, the content-by-process outline, and the evaluating committee's opinions, and pilot tested with 162 volunteer teachers-in-training and experienced teachers. The resulting data were analyzed to determine reliability and content validity of the revised instrument and apparent differences between groups of pilot test participants varied in teaching experience, reading training, and self-perceived need for reading training.

Conclusions drawn from the study included: 1. Evidence of content validity, including principles of effective instruction identified, content-by-process outline, and authorities' judgment, appeared to compare favorably with that reported for the construction of similar objective tests. 2. Reliability coefficients of .77 (Pearson and Spearman-Brown) and of .79 (Kuder-Richardson Formula 20), standard deviation of 7.66, and standard error of measurement of 3.51, indicated the 59-item instrument adequate for drawing accurate conclusions about groups and tentative conclusions about individuals. Scores on the 54-item revised instrument (Kuder-Richardson Formula 20 coefficient of .80) may be considered dependable for both individuals and groups. 3. Experienced teachers scored significantly higher ($p>.01$) than prospective teachers; no significant difference was found between scores of teachers with five or more years of secondary teaching experience and of those with fewer than five years. Teachers with academic training in teaching reading scored significantly higher ($p>.01$) than teachers without such training. No significant difference was found between mean scores of experienced and prospective teachers who indicated on a questionnaire little perceived need for help in teaching students to read content area materials and those indicating such a need. No significant difference was found between mean scores of experienced teachers varied in amount of graduate study. These findings suggested that both classroom experience and academic training in teaching reading significantly increased the kind of knowledge measured by the instrument developed in this study, while increased hours of graduate study did not, and that scores on the instrument did not correspond to teachers' self-perceived need for reading training.

The results of the study implied support for reading training for secondary school content area teachers as well as for the literature questioning the validity of self-report as the basis for evaluating teacher knowledge. The results further suggested a combination of classroom experience and academic training in teaching reading as the optimal situation for preparing secondary school content area teachers to help students read materials in their content areas. Order No. 77-8187, 255 pages.

A STUDY OF THE RELATIONSHIP BETWEEN TENTH GRADE STUDENTS' READING ABILITY AND THEIR COMPREHENSION OF CERTAIN ASSIGNED TEXTBOOKS

KEENAN, Donna Metz, Ph.D.
The Florida State University, 1976

Major Professor: Edwin H. Smith

The purposes of this investigation were: 1. To determine the minimum reading ability, expressed in grade equivalents, needed by 75 percent or more of the tenth grade student population to comprehend, at an independent level, their assigned English, social studies, and science textbooks which range in readability from the tenth to twelfth grade level. 2. To determine the differences in the tenth grade students' comprehension test scores on tests developed from their textbooks in the areas of English, social studies, and science for each reading grade equivalency level from seven to thirteen.

To determine the reading grade equivalents of the tenth grade students in the sample, the comprehension section of the Gates-MacGinitie Reading Test, Form E, was used.

The students' comprehension test scores were measured by an examiner-made comprehension test consisting of 300-340 word passages from nine assigned English, social studies, and science textbooks with eight questions immediately following each passage. The independent level of comprehension was set at 75 percent; thus, the students must have answered correctly six out of the eight questions.

The readability levels of the textbooks were determined by use of the Flesch Reading Ease and FORCAST formulae.

The textbooks are all on the state adopted list for Florida and are currently being used in the northwest county used in this study.

Ninety-five percent of the tenth grade students enrolled in general and advanced classes at two large high schools in a northwest Florida county comprised the sample for this study. The students were administered the Gates-MacGinitie Reading Test, Form E, and an examiner-made comprehension test by their classroom teachers who had previously attended a workshop concerning the two testing instruments. The 445 tenth graders were tested in May, 1976.

The results of the testing were analyzed by frequency distributions and a Cochran Q test for k related samples at the .005 α level.

The conclusions reached were: 1. The minimal reading level needed by at least 75 percent of tenth grade students to successfully comprehend their assigned English textbooks is above twelfth grade level. 2. The minimal reading level needed by at least 75 percent of tenth grade students to successfully comprehend their assigned social studies textbooks is eleventh grade level. 3. The minimal reading level needed by at least 75 percent of tenth grade students to successfully comprehend their assigned science textbooks is above twelfth grade level. 4. There is no significant difference in comprehension among the three areas of English, social studies, and science for students whose reading placement levels are seventh, eighth, ninth, eleventh, and above twelfth grade. 5. A significant difference in comprehension among the three areas of English, social studies, and science was found at the .005 α level for students reading at the tenth and twelfth grade placement levels.

The findings imply that the traditional matching of students to materials by selecting materials of the same readability level as the students' measured reading ability, is not always an adequate means of meeting individual needs of students.

Previous research attempts to correlate students' reading ability and comprehension of their textbooks by using textbook readability as the criterion for student comprehension, can definitely be challenged by the results of this study.

The need for curriculum reform, more adequate teacher inservice and teacher training, and serious research by textbook publishers in the area of readability, is clearly supported by the findings of this investigation.

Order No. 77-8597, 122 pages.

THE RELATIONSHIP BETWEEN READABILITY OF ASSIGNED TEXTBOOKS AND READING LEVEL OF STUDENTS IN A SCHOOL OF NURSING

KILIAN, R.N., Gloria LaVerne, Ph.D.
Kansas State University, 1976

Major Adviser: Dr. Ralph Field

PURPOSE: The purpose of this study was to ascertain the reading abilities of nursing students at the Wichita-St. Joseph School of Nursing and to compare this with the readability level of nursing textbooks and with results of achievement tests and the State Board Test Pool Examination Scores.

HYPOTHESIS OF THE STUDY: 1. There is significant correlation between the reading level of the nursing students as measured by the California Advanced Reading Test, and the reading difficulty of the assigned nursing textbooks as measured by the Fry Readability Graph. 2. There is significant correlation between the reading level as measured by the California Advanced Reading Test, the American College Test Composite Scores, National League for Nursing Achievement Test results, and the State Board Test Pool Examination results. 3. There is a significant difference between the group passing and the group not passing the State Board Test Pool Examination and the American College Test Composite Scores, California Advanced Reading Test including the Total, Reading Comprehension and Reading Vocabulary and National League for Nursing results.

Hypotheses 1, 2, and 3 were retained. Statistical measures used were t-tests, Pearson Correlation Coefficient, and descriptive.

METHOD OF RESEARCH: Data for the study were gathered through tests and through application of the Fry Readability Graph to the nursing textbooks. These data were analyzed to ascertain the significant relationship existing between the reading abilities of nursing textbooks and National League for Nursing Achievement Test scores and State Board Test Pool Examination scores.

CONCLUSIONS: According to the California Advanced Reading Test, Form W, seventy per cent of the third-year students, and seventy-five per cent of the second-year students read at or above the thirteenth grade level. Ninety per cent of the third-year and ninety-four per cent of the second-year students read at the eleventh grade level or above.

The textbooks as measured by the Fry Readability Graph showed five books at college (thirteenth grade and above) level, one at eleventh grade level, and one at the tenth grade readability level. It seems logical that textbook readability levels are within the appropriate range for the students.

Coefficients of correlation indicate that there is a significant relationship among the intercorrelations of the fourteen variables for the third-year group, and also is high among the eight variables in the second-year group. Therefore, it may be concluded that achievement and reading ability have a substantial positive relationship. Order No. 77-5507, 113 pages.

THE EFFECT OF INDIVIDUALIZED READING CONFERENCES UPON READING COMPREHENSION AND ATTITUDE OF HIGH SCHOOL STUDENTS

MAZER, Martin, Ed.D.
Arizona State University, 1976

The purpose of this study was to determine the effect of Individualized Reading conferences upon reading comprehension and attitude toward reading of high school students enrolled in American History classes.

The review of literature indicated that Individualized Reading (1) is established as an effective approach to reading instruction; (2) places great emphasis on the importance of individual differences and positive attitudes toward reading; and (3) is practiced primarily in elementary schools.

The justification of this study was based on three considerations: (1) the need for reading improvement research at the high school level, (2) the need for expanded research of the Individualized Reading program, and (3) the need for reduction of variables in comparative reading education research.

An experimental and a control group were selected by the following procedure. Thirty-six matched pairs (twenty-one pairs completed the study) were selected from a population of ninety-one eleventh graders enrolled in American History classes during the third period at Carl Hayden High School, Phoenix, Arizona. These pairs were matched on the pre-test results of the Davis Reading Test and by sex. The members of each matched pair were randomly assigned to an experimental and a control group. Students of both groups were taken to the library each Wednesday for sixteen weeks and were encouraged to read books of their own choosing.

Six interviewers were scheduled to conduct eight conferences on a one-to-one basis with each of the students in the experimental group to discuss books read; however, due to absences, the average number of conferences completed by the twenty-one members of the experimental group was 5.4. Questions utilized by interviewers were structured to involve students with three levels of reading comprehension: (1) literal, (2) interpretation, and (3) critical reading. No conferences were scheduled for members of the control group.

A dependent t-test was used for statistical analysis of pre- and post-test means for the experimental and control groups on the Davis Reading Test. The dependent t obtained was not significant at the 0.05 level.

Analysis of covariance was used for statistical analysis of (1) within group means, and (2) pre- and post-test between group means for the experimental and the control groups on the Estes Reading Attitude Scale. The f ratio obtained was not significant at the 0.05 level.

The results of this study do not support the use of a limited number of individual conferences as a means to improve reading comprehension and attitudes of high school students enrolled in American History. The results also show that reading conferences, as used in this study, do not adversely affect reading comprehension and attitudes of high school students enrolled in American History.

The researcher recommends that (1) this study be duplicated with other populations and a larger number of students; (2) other studies using the conference aspect of Individualized Reading programs be conducted which vary the number of the conferences, the length of the conferences, and the time spent on independent reading; (3) a similar study be conducted in which the interviewers not only discuss with the students materials read but also assume the additional responsibility of aiding the students with book selection; and (4) more reading studies be conducted with high school students.

Order No. 77-14,540, 89 pages.

EFFECTS OF SPECIFIC 'IMBEDDED AIDS' ON THE COMPREHENSION OF SCIENCE MATERIAL FOR THREE LEVELS OF READERS

MEEKS, Jane Warren, Ph.D.
University of Missouri - Kansas City, 1977

This study replicates and extends findings from previous investigations of the efficacy of "Imbedded Aids" to readers, an alternative approach to textbooks proposed by Anthony Manzo. An attempt was made to determine if specific clusters of "Imbedded Aids" facilitate comprehension of low, medium, and high readers.

Subjects involved in this study were fifty seventh grade students enrolled in a seventh grade science class at a middle school in St. Joseph, Missouri. Students were randomly assigned to one of two treatment conditions, an experimental or a control. The experimental group received instructions from a seventh grade science text containing "Aids" deemed appropriate by the investigator. The control group received instruction from the same text, without the "Imbedded Aids."

Prior to the initiation of instruction, a Cloze passage test was administered in an effort to determine the approximate reading levels of each student. On the basis of these scores, both experimental and control groups were divided into low, medium, and high readers.

The instructional period was four days in duration. The experimenter served as instructor for both groups.

The experimental material consisted of four separate passages from a chapter in a seventh grade science textbook. A specific cluster of Aids was embedded into each passage. The clusters consisted respectively of (1) Vocabulary and Attention-Heightening Devices, (2) Content Mastery Skills, (3) Critical/Reading/Thinking Skills, and (4) All Aids, a composite of previously presented Aids. Subjects in the experimental group devoted their instructional time to being taught to use the Aids and silent reading of aid-augmented selections.

The control group were given the same passages, but without Aids. Their treatment consisted of a directed reading activity.

Short-term comprehension tests over passages read each day were administered to both groups. The experimental group received additional questions that related to information directly presented within the Aids. One week following the completion of instruction, both groups were administered a long-term comprehension measure comprised of all previously administered items. All measurements were constructed by the investigator.

A two by three analysis of variance was performed for each of the four cluster tests under both short and long-term conditions making a total of eight analyses. The treatment condition was designated as one factor, and reading level as the second factor.

No statistically significant differences were found between groups. The only trend noted was in favor of the good readers in the experimental group. It seemed that they might have profited more than others from the Aids.

Order No. 77-27,342, 148 pages.

READERS' WORK: DEVICES FOR ACHIEVING PEDAGOGIC EVENTS IN TEXTUAL MATERIALS FOR READERS AS NOVICES TO SOCIOLOGY

MORRISON, Kenneth L., Ph.D.
York University (Canada), 1976

This study treats as a phenomenon how readers produce correct readings of social science materials by investigating the ways in which normal courses of action become concretized in terms of written procedure. In the study, grounds were established whereby readers' work came to be considered as a "looking phenomenon" so that readers' work could be brought to light as a "rational" (in the sense of a "social") course of conduct. A relationship between textual orders and accountability was sought. The question was asked: How is the writing unfolding so as to schedule its events as specifications of the course of action it concretized? Textual detailing devices were located and found to be formal properties of written procedure of the kind and type examined. Their relationship to readers' work was analyzed as a feature which, when read in a context of a report, exhibited the course of action the report analyzed as observable to paper. An application of textual detailing devices was carried out on introductory manuals in sociology to see how pedagogic events were being achieved in the course of the reading. Thus an orderly course of pedagogy was made visible in manuals where discursive presentations prevailed.

GUIDELINES FOR DEVELOPING RESOURCES FOR LOW-READING-LEVEL CONSUMERS

OLDHAM, Mary Jo, Ph.D.
Southern Illinois University, 1976

Major Professor: Dr. Anna Carol Fults

One concern which needs immediate and continued attention is that of helping people overcome reading problems which in turn should provide them with a greater opportunity for satisfying human needs and growing to their fullest potential thus improving their quality of life. The purpose of this study was to present guidelines for creating low-reading-level resources for homemakers, students and other clientele. These guidelines were designed to serve as a reference to help professional and/or paraprofessionals create new resources and/or to modify existing materials to meet differing needs, interests and abilities of those with whom they work.

Four procedures were used to develop the guidelines and to test their validity: (1) examination of files documenting the methods, materials, procedures and resources used to develop twelve low-reading-level pamphlets in a community college and examination of materials and methods used to teach community college students to prepare resource materials for the special needs learner; (2) interviews with the home economists who designed the twelve low-reading-level pamphlets; (3) interviews with thirty selected users of the twelve pamphlets; (4) judgment of the guidelines by a twelve member professional jury. The first three procedures above provided the bases for developing the guidelines which were evaluated by the professional jury.

Participation in the study included educators, representatives of social agencies and services, paraprofessionals and low-reading-level individuals. Results of the study indicated that the guidelines which were developed are useful and much needed by a variety of professionals and paraprofessionals engaged in helping low-literate individuals improve the quality of their lives. Order No. 77-6246, 150 pages.

THE EFFECTS OF A READING AND LANGUAGE ARTS PROGRAM ON THE CRITICAL THINKING AND CRITICAL READING OF THE FIRST-YEAR LAW STUDENT

PACHTMAN, Andrew Brook, Ph.D.
Syracuse University, 1976

The present study was an attempt to determine what effect a reading/language arts program would have on the critical reading and critical thinking abilities of first-year law students. The program included three components: Comprehension, Study Skills, and Analytical Strategies. The Comprehension Component consisted of the use of literal, interpretive, and applied level reading guides coupled with the use of small group discussion for the case of Laird v. Tatum. The Study Skills Component included the areas of Previewing, Questioning, Reading, Summarizing, Testing (PQRST) and Outlining. Outlining included the briefing of cases, and the identification and use of Organizational Patterns. The Analytical Strategies Component required the student to "think through" the best course of action in terms of the use of legal case briefs, the taking of legal examinations and the presentation of logical arguments.

Three treatment groups were incorporated into the design of the study. Experimental group E_1 received the Comprehension Component only. Experimental group E_2 received both the Comprehension and Study Skills Components. Experimental group E_3 received the Comprehension, Study Skills, and Analytical Strategies Components. In addition, three control groups were selected who received no exposure to any segment of the program, but were tested at the same period of time as their corresponding experimental group.

The principal findings of the study for each of the criterion variables were: 1. There were no significant differences between experimental group E_1 and control group C_1 on a measure of critical thinking/reading ability. 2. There were significant differences ($p < .05$) on a measure of critical thinking/reading ability for groups E_2 and C_2 favoring the E_2 group. 3. There were significant differences ($p < .05$) on a measure of critical thinking/reading favoring the students in group E_3 over the students in group C_3. 4. There were significant differences ($p < .05$) on a measure of critical thinking/reading between pretest-posttest scores for group E_1 favoring the post-test results. 5. There were significant differences ($p < .01$) on a measure of critical thinking/reading between pretest-posttest scores for group E_2 favoring the posttest results. 6. There were significant differences ($p < .01$) on a measure of critical thinking/reading between pretest-posttest scores for group E_3 favoring the posttest results. 7. There were no significant differences on posttest scores obtained on a measure of critical thinking/reading ability between treatment groups E_1 and E_2. 8. There were no significant differences on posttest scores obtained on a measure of critical thinking/reading ability between treatment groups E_2 and E_3. 9. There were significant differences ($p < .05$) on posttest scores obtained on a measure of critical thinking/reading between groups E_1 and E_3 favoring group E_3. 10. There were significant differences ($p < .05$) on a measure of reading comprehension favoring the treatment group over the nontreatment group. 11. There were no significant differences in gain scores on a measure of writing ability between treatment and nontreatment groups. 12. There were significant differences ($p < .05$) in first semester Grade Point Average favoring the treatment group over the nontreatment group.

It was concluded that the experimental treatments, within the stated limits of the study, produced positive significant effects on the critical thinking/reading ability of those students exposed to the program. In addition, the treatment seems to affect academic performance in terms of Grade Point Average and also the general reading comprehension of those students enrolled in the program.

Implications were drawn with respect to practicality of the program and future research possibilities.

Order No. 77-24,569, 173 pages.

THE RELATIVE EFFICACY OF FIVE MODIFIED CLOZE PROCEDURES FOR VOCABULARY INSTRUCTION IN A SEVENTH GRADE SOCIAL STUDIES CLASS

PAIGE, Gomez Collier, Ph.D.
Michigan State University, 1976

The purpose of this study was to determine the relative efficacy of a series of five modified cloze procedures for facilitating vocabulary instruction in a seventh grade social studies class.

This study involved a sample of 127 seventh grade social studies students in five classes, each containing approximately 25 children.

There were five treatment groups in each class. Two modified cloze activities were given to each treatment group each week. These activities were teacher made from prose selections taken from social studies content reading material. The ten vocabulary words and terms selected for study in a particular week were included in the content of these prose selections.

Each cloze activity was modified by having the ten key vocabulary words or terms deleted, each being replaced by spaces of equal length. These activities differed for each of the various treatment groups as follows: Treatment Group I was provided only with blank spaces. Treatment Group II was given the first letter of the deleted word or term. Treatment Group III received the first and last letters of each deleted word or term. Treatment Group IV was provided with a choice of four words, among which was the deleted word or term. Treatment Group V was given only the consonants of the deleted word.

The data analyses were run using the BASTAT and FINN programs at the Michigan State University Computer Center.

Within the limitations of setting, population sampling, and methodology, the findings of this study derived from 15 hypotheses were:

There were no significant differences among five types of cloze procedures as measured by:

the vocabulary post-test
the content matter post-test
the vocabulary delayed post-test
the content matter delayed post-test

There were no significant differences among five types of cloze procedures within high, medium, and low reading achievement levels as measured by:

the vocabulary post-test
the content matter post-test
the vocabulary delayed post-test

There were no significant differences among the three reading achievement levels within each of the five types of cloze procedure as measured by:

the vocabulary post-test
the vocabulary delayed post-test
the content matter delayed post-test

However, there were differences of no significance among the three reading achievement levels within each of the five types of cloze procedure as measured by: the content matter post-test.

There was significant correlation between the vocabulary post-test and the content matter post-test.

There was significant correlation between the vocabulary delayed post-test and the content matter delayed post-test.

To summarize, this study found that the five treatments using modified construction procedures overcame the differences among subjects of different reading levels for the purpose of vocabulary instruction in the social studies content area. These treatments couched their instruction in the context of the content material and successfully accomplished the goal of vocabulary acquisition without causing any sacrifice in the learning of the associated social studies content matter.

This study has identified an instructional technique using modified cloze procedures which can give teachers the freedom of a choice of cloze structure to sharpen their students' skills without impairing or interfering with content learning.

Order No. 77-5863, 123 pages

AN INVESTIGATION TO DETERMINE THE ADEQUACY OF THE GATES-MACGINITIE READING TESTS AS A PREDICTOR OF SUCCESS IN THE FIRST SEMESTER ANATOMY AND PHYSIOLOGY COURSE IN AN OPEN ADMISSIONS COMMUNITY COLLEGE

PREISS, Lorraine Cecilia, Ph.D.
The University of Michigan, 1976

Chairman: Frederick W. Bertolaet

Purpose of the Study: The purpose of this institutional research study was to determine the adequacy of the Gates-MacGinitie Reading Test as a predictor of success in the first semester Anatomy and Physiology course. The study was aimed only at dealing with the specific problem described at Wayne County Community College, an "Open Admissions" community college.

Procedure: The Gates-MacGinitie Reading Test was administered during the Winter semester 1976 to 268 students, the total population of seventeen classes of the Anatomy and Physiology course. Scores were converted to standard scores using the national normative scale provided with the Gates-MacGinitie Test Manual. Unit Topic Tests measuring the academic achievement of the students participating in the research were administered as mid-term and final tests. A student questionnaire containing demographic variables was filled out at the time of taking the Gates-MacGinitie Reading Tests.

The Flesch Reading Ease Formula was used to determine the readability of the textbook used for the Anatomy and Physiology course. Statistical analyses illustrated the frequency distributions and compared variables of vocabulary, comprehension, final grade, unit topic tests and demographic variables. A secondary phase of the research included a need for achievement assessment correlated with the vocabulary standard scores to determine if the combination of scores would reduce the error of prediction. Correlation coefficients were examined and Chi Square analysis was used for demographic variables. Expectancy Tables were prepared to further describe the vocabulary and comprehension correlates.

Hypotheses: Hypothesis One stated: There exists a minimum score in vocabulary as measured by the Gates-MacGinitie Reading Test (E) Form I, such that those who fail to reach that score are likely not to complete the Anatomy and Physiology course successfully, as determined by final semester grade. Hypothesis Two stated: There exists a minimum score in comprehension as measured by the Gates-MacGinitie Reading Test (E) Form I, such that those who fail to reach that score are likely not to complete the Anatomy and Physiology course successfully, as determined by final semester grade. Hypothesis Three stated: There exists a significant correlation between the final semester grade in Anatomy and Physiology and the Unit Topic Tests of content taught in the Anatomy and Physiology course. Analysis of demographic variables was used to determine if they provided any useful information to predict success in the Anatomy and Physiology course.

Findings: There was a significant correlation between the vocabulary and comprehension standard scores and final semester grades. There was some correlation between the Unit Topic Tests and final semester grade.

While there does exist a minimum score in both vocabulary and comprehension that separates the majority of success and failures in the Anatomy and Physiology course, vocabulary is the better predictor. A Vocabulary Expectancy Table with a cut-off score of 50 has an accuracy index of seventy-five percent. Combining the need achievement assessment results with vocabulary scores for marginal cases improves the accuracy index. There was some correlation between the Unit Topic Tests and the Final grade, vocabulary and comprehension. The demographic variables were significantly correlated between age, work in the health field, nursing career choice and vocabulary standard scores.

The Flesch Reading Ease Formula classified the textbook used in the Anatomy and Physiology course at the 10th grade reading level and fairly difficult reading ease value.

Conclusions: One important result of this study is the practical recommendation for using a combination of tests to estimate success in a basic course. The Vocabulary Expectancy Table used in combination with n-achievement assessment for marginal cases raised the predictive accuracy index to ninety percent.

Order No. 77-8014, 195 pages.

THE READABILITY OF SELECTED FOURTH, FIFTH AND SIXTH GRADE SOCIAL STUDIES TEXTBOOKS AS DETERMINED BY THE FRY READABILITY GRAPH AND GROUP INFORMAL READING INVENTORIES

PRUITT, Janet Louise McCracken, Ed.D.
Oregon State University, 1977

Purpose of the Study

The purpose of this study was to determine the readability of three series of fourth, fifth and sixth grade social studies textbooks. Two measurements were utilized: a readability formula (Fry Readability Graph; Knapp, 1971), and group informal reading inventories.

The Fry Graph was applied to ten randomly selected passages in each text; proper nouns were included in the computations. The group informal reading inventories were constructed from the same textbooks on passages not previously taught. The tests were administered in May to 1467 students in 70 randomly selected classrooms.

Procedures

Readability levels derived by the application of the Fry Graph were reported for each text, as was the range of readability within each text and the deviation of each sample from the overall readability of the textbook.

The test scores from the informal reading inventories were first reported in terms of the per cent of subjects scoring at the independent level (90, 95, 100 per cent), the instructional level (65, 70, 75, 80, 85 per cent) and the frustration level (60 per cent or lower) for the sample. Mean test scores were also computed for the sample and the subsets.

To determine if there were significant differences among the subsets, the following null hypotheses were formulated: H_1 There are no significant differences in the mean scores of the urban and rural subjects. H_2 There are no significant differences in the mean scores of the subjects in grades four, five and six. H_3 There are no significant differences among the mean scores of the subjects tested on the D. C. Heath, the Silver Burdett or the Benefic Press social studies series.

Findings of the Study

Fry Readability Graph

1. Two textbooks had readability levels in agreement with the publishers' designated grade level. The remaining seven textbooks had readability levels one to four years above the designated grade level. 2. The average range of readability within the textbooks was 6.2 years with little evidence of a gradation from less difficult to more difficult reading material.

Group Informal Reading Inventories

1. For the total sample of 9.41 per cent of the subjects scored at the independent level, 32.04 per cent scored at the instructional level, and 58.5% per cent scored at the frustration level. The mean test score was 54.82 per cent. 2. The mean score (56.64 per cent) of the urban subjects was significantly higher (.01 level) than the mean score (52.35 per cent) of the rural subjects with a t value of 3.30. H_1 was rejected. 3. The mean score for grade four was 50.35 per cent; for grade five, 53.96 per cent; and for grade six, 58.09 per cent. The analysis of variance resulted in a significant (.01 level) F value of 11.25. H_2 was rejected. 4. The mean scores by publisher were: D. C. Heath, 55.88 per cent; Silver Burdett, 55.77 per cent; and Benefic Press, 50.38 per cent. The analysis of variance resulted in a significant (.01 level) F value of 5.47. H_3 was rejected.

Implications

The findings of this study did not differ in any substantial way from the results reported by earlier investigators. Further studies of the readability of social studies textbooks similar in content to the three series analyzed in this investigation is not warranted.

Recommendations

1. Current knowledge regarding the nature of concept development should be a major consideration for curriculum decisions in the social studies. Piaget's findings regarding the cognitive functioning of elementary school students provide insight regarding the capabilities of this age group. 2. Instructional alternatives that diminish heavy reliance on the textbook should be afforded a fair trial in the classroom, e.g., simulation and gaming, process analog, role playing, problem solving, inquiry approaches, and inductive development of concepts and generalizations. 3. A publicly financed agency staffed by expert analysts and equipped with the necessary resources should be established to provide analysis services to publishers and to determine the difficulty level of all instructional materials as they appear on the market (Bormuth, 1971). 4. Pilot editions of all new textbooks should be field tested with a cross section of students using procedures similar to those utilized by the publishers of standardized tests.

Order No. 77-20,479, 192 pages.

AN INVESTIGATION OF THE EFFECTS OF READING GUIDES AND A DIRECTED READING METHOD UPON WORD PROBLEM COMPREHENSION, PROBLEM SOLVING ABILITY, AND ATTITUDE TOWARD MATHEMATICS

RILEY, James Douglas, Ph.D.
Syracuse University, 1976

Purpose of the Study

The purpose of this study was to compare the effects of reading guides and a directed method on students' comprehension of word problems, problem solving ability, and attitude toward mathematics.

The reading guides utilized in the study were based on a three level construct of comprehension which includes the literal level, the interpretive level, and the applied level (Herber, 1970). The reading guides were comprised of literal, interpretive, and applied level statements related to specific word problems. The literal level (L) consisted of the facts of the problem. The interpretive level (I) consisted of mathematical concepts related to the problem. The applied level (A) statements consisted of numerical depictions related to the problem.

The DR method consisted of worksheets that contained a word problem and the following directions: 1) "Write the facts of the problem that are useful in understanding the problem."; 2) "Write the mathematical expressions (concepts) or ideas that are useful in understanding the problem."; 3) "Write the numerical expressions that are useful in understanding the above problem." (Aukerman, 1972; Shepherd, 1973)

The specific purpose of this study was to determine the differential effect of LIA, LAI, and LA (I presented orally) reading guides and the DR method on students' comprehension of word problems, problem solving ability, and attitude toward mathematics.

Subjects

The sample for the experiment was comprised of 347 seventh graders assigned to a team of seventh grade group discussion. The students' performance in small group discussion was evaluated according to specific criteria.

The teachers and students followed procedures that allowed them to become accustomed to the conditions involved in the treatments.

Each teacher taught all four treatments, teaching each treatment in a different classroom.

All subjects were pretested (week one) and post-tested (week ten) on forms A and B of researcher-constructed tests of word problem comprehensions; and attitude toward mathematics. All subjects were pretested (week one) and post-tested (week ten) on Forms 5 and 6 of the Problem Solving Subtest of the Iowa Test of Basic Skills.

There were no significant differences among the four treatment groups when instruction commenced. Since the treatments LAI, LIA, LA, and DR were randomly assigned to the 12 intact classrooms (3 teachers x 4 treatments = 12 classrooms), analysis of covariance was utilized to determine if significant differences existed among posttest mean scores.

Findings and Conclusions

Analysis of the data indicated that there were no statistically significant differences in word problem comprehension or attitude toward mathematics although the DR treatment group's attitude scores were markedly depressed. Also, there were no significant differences among the treatment groups in problem solving.

No one sequence in which guides should be presented was established for improving word problem comprehension, problem solving ability, or attitude toward mathematics. Nor was it established whether reading guides are superior to the DR method in improving such variables. However, trends in the data indicated that the LAI treatment had a slight advantageous effect on word problem comprehension and attitude toward mathematics.

Implications for Education and Future Research

Implications for education and future research are also presented related to implementation of reading guides in mathematics, refining the definition of the levels of comprehension, the application of reading guides to a larger number of problems and increasing the duration of future study, and the research process.

Order No. 77-9897, 185 pages.

A STUDY OF THE ASSOCIATION BETWEEN THE USE OF INDIVIDUALIZED, SELF-PACING SCIENCE CURRICULUM MATERIALS (ISCS) AS A READING COURSE AND GAINS IN READING COMPREHENSION AND VOCABULARY SKILLS OF SEVENTH GRADE STUDENTS

RIVERS, Robert Hinton, Ph.D.
The Florida State University, 1977

Major Professors: Dr. Lehman Barnes, Mr. George Dawson

This study was designed to determine the relationship between the use of individualized, self-pacing science materials (ISCS) as a reading course and gains in reading achievement and vocabulary skills of seventh grade students at various reading levels.

Two control groups (Traditional Science and ISCS-Science) and one treatment group (ISCS-Reading Course) were established. These groups were made up of seventh grade students from three suburban secondary schools in Northwest Indiana. Students were not grouped, but remained in natural class settings. A standardized reading achievement pretest was administered to all groups in the fall of 1972 and an alternate form was administered as a posttest in late February, 1973.

Prior to the opening of school, ISCS-Reading Course teachers participated in a short workshop, where they were given specific reading activities for students, means by which they could informally assess student reading ability and the pretest reading and vocabulary scores of their students. The control groups received no workshop.

At the end of the study, raw scores were converted to standard scores. These were used in an analysis of covariance procedure to test four hypotheses. Gain scores were used to produce a descriptive analysis. Results showed that students in both ISCS-Science and ISCS-Reading groups made significantly higher gains in mean reading comprehension and vocabulary achievement (on the order of 8 to 10 months) than did students in traditional science classes ($\alpha = .05$). In addition, students in ISCS-Reading classes made higher gains in reading comprehension than students in ISCS-Science classes, although this result was not found to be significant at $\alpha = .05$. It did represent a practical difference of 3 to 4 months in mean reading comprehension achievement. No differences were found in vocabulary achievement among ISCS groups.

The descriptive analysis indicated that most of the differences in gains between groups were made by students reading below grade level.

Though no attempt was made to isolate variables associated with gains, it seems likely that science materials like ISCS that are individualized, emphasize critical thinking and reading skills and that combine motivational activities interwoven with meaningful reading have the potential to promote reading skills.

While some additional gains were made by adapting ISCS for reading instruction, this is probably of limited usefulness. The investigator feels that there is much greater potential in using the ISCS materials as the basis for a language arts-science core program to develop comprehensive reading skills at the junior high level. Order No. 77-24,799, 94 pages.

A COMPARISON OF READABILITY INDEXES OF UPPER ELEMENTARY SOCIAL STUDIES TEXTBOOKS

SIMON, Georgianna, Ph.D.
The University of Michigan, 1977

Chairman: Findlay C. Penix

This study was undertaken to determine whether grade placements recommended by the publishers of twenty-one books used in social studies classes in the upper elementary schools are approximately as reliable as the grade placements obtained from the application of three standard readability formulas derived for that purpose.

Twenty-one books used in social studies classes in the upper elementary schools, grades four, five, and six, were compared using the Joos-Butz (Dale-Chall) Readability Formula, the Simple Test Approach (Flesch) for Readability Formula, and the University of Texas (Danielson-Bryan) Readability Formula. Second, since the results derived from the use of three formulas are readability indices stated in the form of grade levels, the relationship of the grade levels determined from the formulas were compared with grade levels that were ascribed to the textbooks by the publishers. Third, intercorrelation between the three sets of results were computed for the three formulas. The Pearson Product Moment technique of correlation was employed.

The data from this study supported the following findings: 1. A significant relationship was not found between the publishers' designated grade levels and the grade levels for the same selected texts obtained by application of the three readability formulas. 2. Significant relationships were found to exist among the grade level scores of the three readability formulas applied to the selected textbooks. 3. The findings concerned with average readability of the elementary social studies textbooks were as follows: the Joos-Butz Readability Formula, based on the Dale-Chall Formula, rated 72 percent of the textbooks above the assigned grade level; the Simple Test Approach for Readability, based on the Flesch Formula, and the Danielson-Bryan Readability Formula rated all of the social studies textbooks above the publishers' assigned grade level. 4. Grade level variations within fourth, fifth, and sixth grade textbooks, as determined by application of the three readability formulas, were as follows: the Joos-Butz Readability Formula ranged from the fourth grade level through the tenth grade level; the Simple Test Approach for Readability ranged from the fifth grade level through the twelfth grade level; and the Danielson-Bryan Readability Formula ranged from the fourth grade level through the ninth grade level.

Order No. 77-18,117, 159 pages.